Miscellaneous Surface Coating at Area Sources: Summary of New Air Regulations & Permitting Requirements

Iowa Department of Natural Resources
Iowa Waste Reduction Center
Iowa Department of Economic Development
Linn & Polk County Air Quality Programs

Overview

- What is the new federal rule and why is the rule needed?
- Affected Sources
- Exempted Sources
- Operations & activities not affected by the new rule
- Affected operations and activities
- Important compliance dates
- Rule requirements
- Iowa air permitting requirements
- Iowa plans for rule adoption & implementation
- Q & A on presentation information
- **Post-presentation:** Add'l Q & A and open discussion

What is the New Federal Rule and Why is This Rule Needed?

What is the New Rule?

- On January 9, 2008, the U.S. EPA published in the Federal Register a new regulation impacting certain surface coating operations
- National Emissions Standards for Hazardous Air Pollutants (NESHAP): Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources (40 CFR Part 63, Subpart HHHHHH) – we call it "6H," for short
- Rule, background documents and compliance tools are available at www.epa.gov/ttn/atw/area/arearules.html

Why the Need for this Rule?

- The federal Clean Air Act (CAA) requires EPA to reduce exposure to air toxics, also known as hazardous air pollutants (HAP), because these chemicals are known or suspected to cause cancer or other serious health effects

Why the Need for this Rule?

- EPA required to identify and list the "area source" categories that represent 90% of the emissions of urban air toxics
- Area sources are generally small in size but are also large in number
- Collectively, area sources may pose health risks

Why the Need for this Rule?

- Auto body refinishing and miscellaneous surface coating are two of the 70 listed area source categories
- Data from paint suppliers has shown that coatings used in auto body and other surface coating operations contain lead, chromium, cadmium, manganese, and nickel compounds (these are called **Target HAP** in the 6H rule)

Health - Lead, Chromium & Cadmium

- Short-term (acute) health effects through inhalation can include damage to the brain and kidneys, shortness of breath and lung irritation
- Long-term (chronic) impacts include slowed cognitive development in children, reproductive problems, decreased pulmonary function, and kidney disease
- OSHA-defined carcinogens

Health - Nickel

- Not so bad? Low levels in the human diet may be nutritionally essential
- But…long-term skin contact can cause “nickel dermatitis” - itching of the fingers, hands, and forearms
- Increased risk of lung and nasal cancers
- OSHA-defined carcinogen

Health - Manganese

- Again, why so bad? Low levels in the human diet are nutritionally essential
- But…long-term inhalation exposure to higher levels can lead to a syndrome called "Manganism," characterized by weakness and lethargy, tremors, a mask-like face, and psychological disturbances
- Not an OSHA-defined carcinogen at this time

NESHAP Affected Sources

Affected Sources

- The 6H NESHAP applies to certain surface coating operations performed at *area sources*, sometime called *minor sources*, that emit hazardous air pollutants (HAP)
  - An *area source* has potential emissions of less than 10 tons per year (TPY) of any one HAP, and less than 25 TPY of all combined HAP
  - In contrast, a *major source* has potential HAP greater than or equal to these thresholds, and is regulated under other NESHAP, sometimes called MACT

6H NESHAP: Three Source Categories

- Paint stripping operations
- Motor vehicle/mobile equipment (auto body refinishing)
- Miscellaneous surface coating

Affected Sources – Paint Stripping

- Will not be covered in this presentation
  - 6H NESHAP covers operations that use Methylene Chloride (MeCl) to remove dried paint from wood, plastic, metal or other
  - At this time, the DNR is not aware of any paint stripping operations that would be affected
  - **Fact Sheet available** – Please review if you think your facility may be an affected source

Affected Sources – Auto body

- Motor vehicle and mobile equipment surface coating operations
  - Includes mobile repair operations
  - Does not include individuals coating two (2) or fewer vehicles in a year, as long as no compensation is received

Important Definitions

- *Motor vehicle* means any self-propelled vehicle, including automobiles, light duty trucks, golf carts, vans, and motorcycles
- *Mobile equipment* means any device that may be drawn and/or driven on a roadway including, but not limited to, heavy-duty trucks, bulldozers, motor homes, and other recreational vehicles (including camping trailers and fifth wheels)

Affected Sources – Miscellaneous

- Metal or plastic parts or products surface coating operations
  - The rule only applies if coatings contain *Target HAP*:
    - Lead (Pb)
    - Manganese (Mn)
    - Nickel (Ni)
    - Cadmium (Cd)
    - Compounds of chromium (Cr)

Target HAP Containing Coatings

- Coatings are considered Target HAP containing coatings if:
  - The coating contains any individual Target HAP that is an OSHA-defined carcinogen at a concentration greater than 0.1 percent by mass and/or,
  - The coating contains any individual Target HAP that is not an OSHA-defined carcinogen at a concentration greater than 1.0 percent by mass
  - Currently, all the Target HAP covered by this rule are OSHA-defined carcinogens except manganese (Mn)

Sources Exempted from NESHAP

Important Distinction

- Metal or plastic parts or products surface coating operations that don't use Target HAP are automatically exempt from this rule
- Motor vehicle and mobile equipment surface coating operations that don't use Target HAP must petition the Administrator (EPA, state, or local program) for an exemption

The Iowa DNR is not yet the official "Administrator" with regard to this rule – more on that later

Sources Exempt From this Rule

- Armed Forces, NASA, or National Nuclear Security Administration operations performing surface coating
- Surface coating performed on military munitions or equipment for use by Armed Forces
- Surface coating performed by individuals on personal vehicles, possessions, or property as a hobby or maintenance, or done by individuals for others without compensation (as long as no more than two cars are coated per year)

Operations & Activities NOT covered under the NESHAP

Operations NOT affected

- Research and laboratory activities
- Quality control activities
- Activities covered under any other area source NESHAP
- Motor vehicle and mobile equipment spray-applied surface coating operations who successfully petition the Administrator for exemption, demonstrating that no target HAPs used in any coatings
- Facility maintenance

Facility Maintenance

- *Facility maintenance* includes the refinishing of mobile equipment in the field or at the site where they are used in service, such as farm equipment that cannot feasibly be moved to a refinishing facility
  - Such mobile equipment also includes items, such as fork trucks, that are used in a manufacturing facility and which are refinished in that same facility
- *Facility maintenance* also includes the application of coatings to stationary structures at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs

Facility Maintenance

- *Facility maintenance* does not include surface coating of motor vehicles, mobile equipment, or items that routinely leave and return to the facility, such as delivery trucks, rental equipment, or containers used to transport, deliver, distribute, or dispense commercial products to customers, such as compressed gas canisters

Activities Not Subject to Rule

- Spray applied applications using a hand-held device with a cup capacity no more than 3.0 fluid ounces
- Powder coating
- Hand-held, non-refillable aerosol containers
- Non-atomizing technology
  - Brushes, rollers, hand wiping
  - Coating techniques – flow, dip, electrode position, web, coil
  - Touch up markers or marking pens
- Thermal spray operations using solid metallic or non-metallic materials

Coatings Not Subject to Rule

- Decorative, protective, or functional materials that consist only of protective oils for metal, acids, bases, or any combination
- Paper film or plastic film that may be pre-coated with adhesive
- Adhesives, sealants, maskants, or caulking materials
- Temporary protective coatings, lubricants, or surface preparation materials
- In-mold coatings that are spray-applied in the manufacture of reinforced plastic composite parts

NESHAP Affected Operations and Activities

Operations Included

- Any one of the following:
  - Mixing rooms and equipment
  - Spray booths, ventilated prep stations, curing ovens and associated equipment
  - Spray guns and associated equipment
  - Spray gun cleaning equipment
  - Equipment used for storage, handling, recovery, or recycling of cleaning solvent or waste paint

New or Existing Source?

- New Sources
  - Began construction of source after September 17, 2007
    - Except for construction of new paint booths, enclosed spray gun cleaners, or spray guns to comply with the rule
  - Include any new affected equipment where the source was not previously engaged in the activity
  - Reconstructed
- Existing Sources = not new

NESHAP Compliance Dates

When Do I Have to Comply?

- New sources by January 9, 2008 or whenever you start operating the new equipment, which ever is later
- Existing sources have until January 10, 2011

NESHAP Requirements

Requirements for Motor Vehicle, Mobile Equipment and Misc Surface Coating

- **1:** Painters must be certified as completing training in proper spray application of surface coatings, setup and maintenance of spray equipment
  - Except students of accredited surface coating training program who are under the direct supervision of an instructor who is certified

Requirements for Motor Vehicle, Mobile Equipment and Misc Surface Coating

- 2: Spray-applied coatings must be applied in spray booth, preparation station, or mobile enclosure that meets a and b, c or d:
  - a: Fitted with filter system demonstrated to have 98% collection efficiency, using vendor provided test data, or using water wash spray booths operated to manufacturer's specs
  - b: Booths and prep stations for complete motor vehicles or mobile equipment must
    - Have full roof and four walls or side curtains, and operate and negative pressure; OR
    - Use downdraft booth operated at up to, but no more than, 0.05 inches w.g. positive pressure

Requirements for Motor Vehicle, Mobile Equipment and Misc Surface Coating

- 2: Spray booths, prep stations, or mobile enclosures
  - c: Booths or prep stations for miscellaneous coating or vehicle subassemblies
    - Have full roof, at least 3 complete walls or side curtains, and ventilated so air is drawn into the booth
    - Roof and walls may have openings for conveyors
  - d: Mobile enclosures for spot repairs must enclose and seal against the surface being coated is retained in enclosure and directed to the filter

Requirements for Motor Vehicle, Mobile Equipment and Misc Surface Coating

- 3: Spray-applied coatings must be applied with one of the following gun technologies:
  - High volume, low pressure (HVLP)
  - Electrostatic
  - Airless
  - Air-assisted airless
  - With written approval from Administrator, other spray technology demonstrated to achieve equivalent transfer efficiency

Requirements for Motor Vehicle, Mobile Equipment and Misc Surface Coating

- 3: Listed spray technologies not required if:
  - Painting is performed by students and instructors at paint training centers
  - Coating aerospace vehicle

Requirements for Motor Vehicle, Mobile Equipment and Misc Surface Coating

- 4: Spray gun cleaning operation should prevent atomized mist or avoid spraying cleaning solvent and paint residue outside container used to collect waste solvent
  - Acceptable options include:
    - Hand cleaning of disassembled gun
    - Flush gun with solvent, without spraying
    - Use fully enclosed gun cleaner
    - Combination of non-atomizing methods

Requirements for Motor Vehicle, Mobile Equipment and Misc Surface Coating

- Train all personnel, including contractors, who spray apply coatings
  - **Initial Training**
    - NEW facility - within 180 days of **hire** date or **July 7, 2008,** whichever is later
    - EXISTING facility - within 180 days of **hire** date or **January 10, 2011,** whichever is later
    - Existing personnel can use training that took place up to five years prior to the "180 days" date, if it met elements of training program required in the rule
  - **Refresher training** - at least once every five years following initial training date

Requirements for Motor Vehicle, Mobile Equipment and Misc Surface Coating

- Training program must include:
  - Spray gun equipment selection, set up, and operation (measuring viscosity, selecting proper tip or nozzle, proper spray pattern, air pressure and volume, and fluid delivery rate)
  - Best spray technique for different types of coatings to improve transfer efficiency and minimize overspray (spray gun distance and angle to the part, proper banding and overlap, reducing lead and lag spraying)
  - Routine booth and filter maintenance, filter selection and installation
  - Compliance with requirements of the NESHAP

Requirements for Motor Vehicle, Mobile Equipment and Misc Surface Coating

- Owner or operator must certify training of each person was completed
- Certification must include:
  - List of personnel who are required to be trained, with name and job description
  - Hands-on and classroom instruction, covering elements of training program at a minimum
  - Description of methods used at completion of initial or refresher training to demonstrate successful completion

Recordkeeping

- Surface Coating
  - Painter training certification
  - Documentation of filter efficiency
  - Copies of all notifications and reports required
  - Records of any deviations from requirements in the rule, including date and time period it occurred, a description of deviation, and corrective actions taken
  - If spray gun does not meet definition of acceptable technologies and has cup capacity at least 3.0 oz, documentation from spray gun manufacturer that Administrator has determined equivalent transfer efficiency

Notification and Reporting

- Notification of Compliance Status
  - Existing sources not able to demonstrate compliance in the initial notification must submit this notification within 60 days after January 10, 2011
  - Include same basic information as initial notification
  - Indicate date of compliance with all relevant requirements
- Annual Notification of Changes Report
  - Sources must submit report annually prior to March 1 if any previously reported information changed during the previous year

Iowa Air Permitting Requirements

Iowa Permitting Programs

- State-Wide Program

  Iowa Department of Natural Resources – Air Quality Bureau

- Local Programs

  Polk County Public Works – Air Quality Division (Des Moines Area)

  Linn County Public Health – Air Quality Division (Cedar Rapids Area)

Facilities That Do Not Use The Target HAP

	Quantity of Paint	6H Applicability	What do I need to submit?	By what date?
Existing Misc. Metal & Plastic Parts Facility	Any	Not subject	Nothing	--
New Misc. Metal & Plastic Parts Facility	< 3 gal/day	Not subject	PBR form certifying no Target HAP	Before startup
	≥ 3 gal/day	Not subject	Construction permit application certifying no Target HAP	Before startup
Existing Autobody Facility	< 3 gal/day	Petition for exemption	Letter to Administrator or new PBR form certifying no Target HAP	January 10, 2011
	≥ 3 gal/day	Petition for exemption	Letter to the Administrator certifying no Target HAP	January 10, 2011
New Autobody Facility	< 3 gal/day	Petition for exemption	PBR form certifying no Target HAP	Before startup
	≥ 3 gal/day	Petition for exemption	Construction permit application certifying no Target HAP	Before startup

Facilities That Use The Target HAP

	Quantity of Paint	6H Applicability	What do I need to submit?	By what date?
Existing Facility	<3 gal/day	Subject to 6H	DNR Initial Notification of 6H Applicability and; Revised PBR form and DNR Notification of Compliance Status	January 11, 2010; March 11, 2011
	≥ 3 gal/day	Subject to 6H	DNR Initial Notification of 6H Applicability and; DNR Notification of Compliance Status	January 11, 2010; March 11, 2011
New Facility	< 3 gal/day	Subject to 6H	PBR form and; DNR Notification of Compliance Status	Startup; July 7, 2008 or 180 days after startup, whichever is later
	≥ 3 gal/day	Subject to 6H	DNR construction permit application and; DNR Initial Notification of 6H Applicability and Notification of Compliance Status	Before intended startup date; July 7, 2008 or 180 days after startup, whichever is later

Construction Permit Exemptions for Surface Coating Operations

- "bb" – Indoor Vented Powder Coat Operations
- "ee" – Surface coating that uses only nonrefillable hand-held aerosol cans at a facility where VOC emissions do not exceed 5 tons per year…
- All other possible surface coating exemptions are not available to facilities subject to NESHAP requirements

Polk County Permit Requirements

- All surface coating operations are required to obtain a construction permit and operating permit regardless of 6H NESHAP applicability unless exempt
- Proposing to modify exemptions to not allow facilities subject to 6H NESHAP to be considered exempt from permitting requirements
  - Not many surface coating facilities currently qualify for exemption

Linn County Permit Requirements

- Linn County currently permits surface coating facilities
- Two-step air permitting process:
  - Authorization to Install
  - Permit to Operate
- Training for Linn County facilities will be advertised once developed

NESHAP Adoption & Implementation

NESHAP Implementation

- The "Administrator" implements and enforces – means EPA or the State or local agency granted delegation
- Iowa DNR is preparing to take delegation of 6H NESHAP and update PBR requirements
- Rulemaking process to start in August (should have official delegation in early 2009)
- Linn and Polk County will adopt rules after DNR
- EPA always retains joint authority for implementation and enforcement

General Contact Information

- **NESHAP questions**
  - Diane Brockshus - DNR Air Quality Bureau diane.brockshus@dnr.iowa.gov or 515-281-4801
  - Christine Paulson - DNR Air Quality Bureau christine.paulson@dnr.iowa.gov or 515-242-5154
- **Permitting questions (not in Linn or Polk Co.'s)**
  - Sarah Piziali – DNR Air Quality Bureau sarah.piziali@dnr.iowa.gov or 515-281-3762 or 1-877-AIR-IOWA (hotline)
- **Technical air assistance for small businesses**
  - Dan Nickey – UNI IAEAP daniel.nickey@uni.edu or 319-273-6588

Questions?

Thank you!